

IN THE CLAIMS

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52. (original) A method of making a microelectronic assembly comprising:

(a) providing a connection component having a first surface including conductive leads and contacts, said conductive leads having terminal ends permanently secured to said connection component and tip ends releasably secured to said connection component;

(b) juxtaposing a first microelectronic element having contacts with the first surface of said connection component and attaching the contacts of said first microelectronic element to the tip ends of said leads;

(c) attaching a second microelectronic having contacts to a back surface of said first microelectronic element, wherein the contacts of said second microelectronic element face away from the first surface of said connection component;

(d) wire bonding the contacts on said connection component with the contacts of said second microelectronic element so that elongated bonding wires extend between the contacts of said connection component and the contacts of said second microelectronic element; and

(e) after the wire bonding step, moving said first and second microelectronic elements through a preselected displacement relative to said connection component so as to deform the bonding wires and the leads.

53. (original) The method as claimed in claim 52, wherein the moving step further comprises:

releasing the tip ends of said leads from the top surface of said connection component; and bending said leads into a substantially s-shaped configuration.

54. (original) The method as claimed in claim 52, wherein said bonding wires flex and bend during the moving step for maintaining an electrical connection between the contacts of said second microelectronic element and the contacts of said connection component.

55. (original) The method as claimed in claim 52, further comprising introducing a curable liquid material between the top surface of said connection component and the contact bearing face of said first microelectronic element.

56. (original) The method as claimed in claim 55, wherein said curable liquid material is introduced during or after the moving step.

57. (original) The method as claimed in claim 56, wherein said curable liquid material is introduced during the moving step so that said first and second microelectronic elements move away from said connection component at least partially under the influence of the pressure of said curable liquid material.

58. (original) The method as claimed in claim 55, wherein the introducing a curable liquid material step includes encapsulating said first and second microelectronic elements, the contacts of said second microelectronic element, and said conductive wires with said curable liquid material.

59. (original) The method as claimed in claim 55, further comprising curing said curable liquid material so as to provide a compliant layer that enables said first and second microelectronic elements to move relative to said connection component during thermal cycling of said microelectronic assembly.

60. (original) The method as claimed in claim 59, wherein said compliant layer enables said conductive wires and conductive leads to flex and bend during thermal cycling for maintaining reliable electrical interconnections within said microelectronic assembly.

61. (original) The method as claimed in claim 52, wherein said connection component comprises a flexible dielectric sheet having the first surface and a second surface remote therefrom.

62. (original) The method as claimed in claim 52, wherein said first microelectronic element includes one or more semiconductor chips.

63. (original) The method as claimed in claim 52, wherein said second microelectronic element includes one or more semiconductor chips.

64. (original) The method as claimed in claim 52, wherein said conductive wires have first ends bonded to one of the contacts of said second microelectronic element and second ends bonded to the contacts of said connection component.

65. (original) The method as claimed in claim 52, wherein said first microelectronic element or said second microelectronic element includes a semiconductor wafer.

66. (original) The method as claimed in claim 52, further comprising attaching rear surfaces of said first and second microelectronic elements to one another.

67. (original) The method as claimed in claim 66, wherein the attaching step includes providing an adhesive between the rear surfaces of said first and second microelectronic elements.

68. (original) The method as claimed in claim 67, wherein said adhesive is a thermally conductive adhesive.

69. (original) The method as claimed in claim 61, wherein said connection component includes one or more terminals accessible at the second surface thereof, said terminals being electrically interconnected with the permanently secured ends of said leads or to the contacts of said connection component.

70. (original) The method as claimed in claim 69, further comprising attaching one or more conductive masses to the terminals of said connection component.

71. (original) The method as claimed in claim 70, further comprising bonding said microelectronic assembly to a printed circuit board.

72. (original) The method as claimed in claim 52, further comprising electrically interconnecting one or more of said leads of said connection component with one or more of said contacts of said connection component.

73. (original) The method as claimed in claim 52, further comprising providing an expandable structure between said first microelectronic element and said connection component and expanding said expandable structure during the moving step.

74. (original) A microelectronic assembly made according to the method of claim 52.

75. (new) A method of making a microelectronic assembly comprising:

(a) providing a connection component having a first surface including conductive leads and contacts, said conductive leads having terminal ends permanently secured to said connection component and tip ends releasably secured to said connection component;

(b) juxtaposing a first microelectronic element having contacts with the first surface of said connection component and attaching the contacts of said first microelectronic element to the tip ends of said leads;

(c) attaching a second microelectronic having contacts to a back surface of said first microelectronic element, wherein the contacts of said second microelectronic element face away from the first surface of said connection component;

(d) wire bonding the contacts on said connection component with the contacts of said second microelectronic element so that elongated bonding wires extend between the contacts of said connection component and the contacts of said second microelectronic element;

(e) after the wire bonding step, moving said first and second microelectronic elements through a preselected displacement relative to said connection component so as to deform the bonding wires and the leads; and

(f) introducing a curable liquid material between the top surface of said connection component and the contact bearing face of said first microelectronic element, wherein said curable liquid material is introduced during or after the moving step.

76. (new) A method of making a microelectronic assembly comprising:


(a) providing a connection component having a first surface including conductive leads and contacts, said conductive leads having terminal ends permanently secured to said connection component and tip ends releasably secured to said connection component;

(b) juxtaposing a first microelectronic element having contacts with the first surface of said connection component and attaching the contacts of said first microelectronic element to the tip ends of said leads;

(c) attaching a second microelectronic having contacts to a back surface of said first microelectronic element, wherein the contacts of said second microelectronic element face away from the first surface of said connection component;

(d) wire bonding the contacts on said connection component with the contacts of said second microelectronic element so that elongated bonding wires extend between the contacts of said connection component and the contacts of said second microelectronic element;

(e) after the wire bonding step, moving said first and second microelectronic elements through a preselected displacement relative to said connection component so as to deform the bonding wires and the leads; and

 (f) providing an expandable structure between said first microelectronic element and said connection component and expanding said expandable structure during the moving-step.

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